

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion is respectfully requested.

Claims 18, 21, 23-25, 28-31, 33 and 37-58 are pending in the present application. Claims 1-17, 19-20, 22, 26, 32 and 34-36 are canceled; Claims 18, 21, 23-25, 28 and 33 are amended; and Claims 37-58 are added by the present amendment. Support for the new and amended claims can be found in the original specification, claims and drawings.<sup>1</sup> No new matter is presented.

In the outstanding Official Action, Claims 1, 4, 5, 8, 10 and 13 were objected to because of minor informalities; Claims 14-16 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Claims 1, 2, 5, 6, 8, 10 and 11 were rejected under 35 U.S.C. §102(b) as anticipated by Furuya (U.S. Patent No. 4,888,767, hereinafter “Furuya”); Claims 14-16 were rejected under 35 U.S.C. §103(a) as unpatentable over Furuya; Claims 17, 19, 20, 24-26, 28, 31, 32 and 34-36 were rejected under 35 U.S.C. 103(a) as unpatentable over Schramm (U.S. Patent No. 6,208,663, hereinafter “Schramm”) in view of Furuya; Claims 1, 3, 5, 7-9, 10 and 12 were rejected under 35 U.S.C. §103(a) as unpatentable over Hiramatsu (U.S. Patent No. 6,519,278, hereinafter “Hiramatsu”) in view of Furuya; Claims 21 and 23 were rejected under 35 U.S.C. §103(a) as unpatentable over Raitola (U. S. Patent No. 6,317,418, hereinafter “Raitola”) in view of Furuya; Claims 4 and 13 were rejected under 35 U.S.C. §103(a) as unpatentable over Hiramatsu, in view of Furuya and further in view of Karasawa (U. S. Patent No. 5,347,535, hereinafter “Karasawa”); Claims 18, 27 and 33 were rejected under 35 U.S.C. §103(a) as unpatentable over Furuya in view of Nokia Telecommunications (WO 99/01950 hereinafter “Nokia”); and Claims 22, 29 and 30 were rejected under 35 U.S.C. §103(a) as unpatentable over Raitola in

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<sup>1</sup> e.g., new Claims 37-56 are based on original Claim 3, and pp. 16 and 19 of the specification.

view of Furuya and further in view of Chuang (U. S. Patent No. 6,823,005, hereinafter “Chuang”).

Claims 1, 4, 5, 8, 10 and 13 were objected to because of minor informalities, and Claims 14-16 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The above noted claims are canceled by the present amendment, thereby rendering the above noted objections and rejections to these claims moot.

Claims 18, 27 and 33 were rejected under 35 U.S.C. §103(a) as unpatentable over Furuya in view of Nokia. Applicants respectfully submit that amended independent Claims 18, 27 and 33 state novel features clearly not taught or rendered obvious by the applied references.

Amended independent Claim 18 recites, *inter alia*, a multicast transmission method, comprising:

a mobile station sending a retransmission request signal to said base station when said mobile station detects an error in a multicast signal; and  
said base station ***determining directivity of an antenna so as to increase gain for said mobile station that sends said retransmission request signal***, and retransmitting a multicast signal by using said directivity.

As described in an exemplary, non-limiting embodiment at pp. 22-25 of the specification, receiving quality is improved by increasing base station antenna gain for each mobile station which requests retransmission. Thus, the possibility of repeating retransmission decreases so that throughput of the whole system improves.

The outstanding Official Action admits that Furuya fails to teach or suggest “determining directivity of an antenna on the basis of an incoming wave from [a] mobile station...and retransmitting a multicast signal by using said directivity.”<sup>2</sup> Further, Furuya

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<sup>2</sup> Outstanding Official Action, p. 12.

fails to teach or suggest determining the directivity of an antenna whatsoever. In an attempt to cure this deficiency in Furuya, the Official Action relies on Nokia.

Nokia describes a method of determining directivity based on a received wave.<sup>3</sup> However, Nokia fails to teach or suggest ***determining directivity of an antenna so as to increase gain for said mobile station that sends said retransmission request signal***, as recited in amended independent Claim 18.

Accordingly, Applicants respectfully request that the rejection of amended independent Claim 18 (and Claim 24, which depends therefrom) under 35 U.S.C. §103 be withdrawn. For substantially similar reasons as provided with respect to amended independent Claim 18, it is also submitted that amended independent Claims 27 and 33 patentably define over Nokia and/or Furuya.

Claims 22 and 29 were rejected under 35 U.S.C. §103(a) as unpatentable over Raitola in view of Furuya and further in view of Chuang. Applicants respectfully submit that independent Claims 21 (amended to be based on original Claim 22), 28 and 29 state novel features clearly not taught or rendered obvious by the applied references.

Amended independent Claim 21 recites, *inter alia*, A multicast transmission method, wherein

***...when said mobile station detects an error in said multicast signal, said mobile station sends said retransmission request signal when said receiving quality is better than a predetermined value, and said mobile station stores said retransmission request signal when said receiving quality of not better than a predetermined value; and  
said mobile station sends said retransmission request signal which is stored when receiving quality becomes better than a predetermined value, and  
said base station retransmits a multicast signal corresponding to said retransmission request signal when said base station receives said retransmission request signal from said mobile station.***

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<sup>3</sup> Nokia, p. 6, lines 32-34.

The outstanding Official Action admits that neither Raitola nor Furuya teach or suggest “when said mobile station detects an error in said multicast signal, said mobile station sends said retransmission request signal when said receiving quality is better than a predetermined value, and said mobile station stores said retransmission request signal when said receiving quality is not better than a predetermined value; and said mobile station sends said retransmission request signal which is stored when receiving quality becomes better than a predetermined value”.<sup>4</sup> In an attempt to cure these deficiencies in Raitola and Furuya, the Official Action relied on Chuang.

Chuang describes a system in which if a receiving quality is better than the threshold, transmission takes place, and when it is below the threshold there is no transmission, and once receiving quality goes above a threshold, the transmission continues.<sup>5</sup> However, this does not correspond to the claimed feature which is not simply performing transmission or stopping transmission based on quality. Instead amended independent Claim 21 recites *when said mobile station detects an error in said multicast signal, said mobile station sends said retransmission request signal when said receiving quality is better than a predetermined value, and said mobile station stores said retransmission request signal when said receiving quality of not better than a predetermined value. and said mobile station sends said retransmission request signal which is stored when receiving quality becomes better than a predetermined value.* Chuang fails to teach or suggest every aspect of this above noted claimed feature.

Accordingly, Applicants respectfully request that the rejection of amended independent Claim 21 (and Claim 23, which depends therefrom) under 35 U.S.C. §103 be withdrawn. For substantially similar reasons as provided with respect to amended independent Claim 21, it is also submitted that amended independent Claims 28 and 29 (and

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<sup>4</sup> Outstanding Official Action, p.13.

<sup>5</sup> Chuang, Abstract.

any claims that depend therefrom) patentably define over Raitola and/or Furuya and/or Chuang.

Claims 17, 19, 20, 24-26, 28, 31, 32 and 34-36 were rejected under 35 U.S.C. 103(a) as unpatentable over Schramm in view of Furuya. Applicants respectfully submit that amended independent Claims 25 and 31, and new Claims 57 and 58 state novel features clearly not taught or rendered obvious by the applied references.

Amended independent Claim 25 recites, *inter alia*, A multicast transmission, wherein

if said mobile station receives a retransmitted multicast signal without an error after sending a retransmission request signal to said base station when detecting an error in a received multicast signal, ***said mobile station does not perform error detection for a multicast signal which includes the same information as said retransmitted multicast signal and which is further retransmitted after receiving said retransmitted multicast signal***; and

when said mobile station does not detect any error in a received multicast signal, said mobile station does not send any signal,

said base station monitors a receiving state of said multicast signal in said mobile stations, and changing a transmission methods to conform to said receiving state according to a result of monitoring, and sending a multicast signal.

The Official Action cites the ARQ routine in Schramm in addressing the above emphasized claimed feature. However, the ARQ routine in Schramm fails to teach or suggest a step of ***not performing error detection for a multicast signal which includes the same information as said retransmitted multicast signal and which is further retransmitted after receiving said retransmitted multicast signal***, as recited in amended independent Claim 25. Generally, in an ARQ routine, error detection is performed for every received signal. According to the present invention, the number of retransmissions can be decreased.

Accordingly, Applicants respectfully request that the rejection of amended independent Claim 25 under 35 U.S.C. §103 be withdrawn. For substantially similar reasons as provided with respect to amended independent Claim 25, it is also submitted that amended

independent Claim 31, and new Claims 57 and 58 patentably define over Schramm in view of Furuya.

Finally, new Claim 37 recites a multicast transmission method, comprising

a mobile station in said mobile stations sending spreading code as a retransmission request signal to said base station when said mobile station detects an error in a received multicast signal; and

***said base station obtaining a correlation value of said spreading code by using a correlator, judging that said spreading code is a retransmission request when said correlation value is greater than a threshold, and retransmitting a multicast signal corresponding to said retransmission request.***

New Claim 37 is based on original Claim 3, which was rejected under 35 U.S.C. §103 as unpatentable over Hiramatsu in view of Furuya.

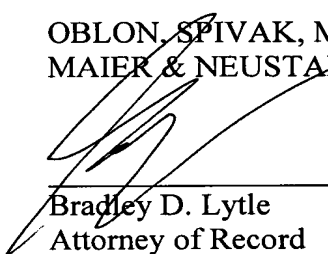
Hiramatsu describes detecting receiving quality values of a signal transmitted from a mobile station with respect to individual spreading code. However, as described in col. 6, lines 29-39, Hiramatsu describes that receiving quality is detected from symbols after despread or CRC. Hiramatsu fails to teach or suggest that ***said base station obtain[s] a correlation value of said spreading code by using a correlator, judging that said spreading code is a retransmission request when said correlation value is greater than a threshold***, as recited in new independent Claims 37-56 either by virtue of independent recitation or dependency.

Accordingly, for at least the reasons discussed above, Applicants respectfully submit that new Claims 37-56 patentably define over the applied references.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 18, 21, 23-25, 28-31, 33 and 37-58 is definite and patentably distinguishing over the applied references. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of the application is therefore requested.

Respectfully submitted,

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